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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,476	10/25/2001	Olli-Pekka Eroma	85940/18	4438
26646	7590	01/18/2005	EXAMINER	
KENYON & KENYON ONE BROADWAY NEW YORK, NY 10004			NAFF, DAVID M	
			ART UNIT	PAPER NUMBER
			1651	

DATE MAILED: 01/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/035,476

Applicant(s)

EROMA ET AL.

Examiner

David M. Naff

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 August 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-79 is/are pending in the application.
- 4a) Of the above claim(s) 1-51 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 52-79 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/15/02, 6/3/02</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

In a response of 8/18/04 to a restriction requirement of 6/18/04, applicants elected Group III claims 52-79 with traverse.

5 The traverse is on the ground that the claims of inventions I, II and III are sufficiently related to be presented in a single application because the claims of all the groups are directed to processing a lignocellulose-containing material by hydrolysis or partial hydrolysis of the lignocellulose material, and require main process steps as shown by the flow chart of Figure 2.

10 While there may be certain steps that are common to the claims of each group, there are also steps that are not common as set forth in the restriction requirement. The different steps of the claims of each group result in the claims of each group requiring a different and distinct invention from claims of the other groups. Examining all  
15 the claims of the different inventions of Groups I, II and III will place a serious burden on the examiner.

For the above reasons, the restriction requirement is adhered to and made final.

20 Claims 1-51 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 8/18/04.

Claims examined on the merits are 52-79.

25 Form PTO-1449 that is a copy of the form filed 5/14/01 in parent application 08/928,893 lists abstracts from Chemical Abstracts when

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listing journal articles. However, as set forth in the Office action of 6/27/01 in the parent application, only copies of the journal articles have been supplied. The abstracts from Chemical Abstracts are separate documents from a separate source, and must be listed  
5 separate from the journal articles and copies of the pages from Chemical Abstracts listed must be supplied. Therefore, the Chemical Abstracts citations have been deleted from the form. While copies of abstracts have been supplied, these copies are from a source other than Chemical Abstracts, and are not copies of the pages listed as  
10 being from Chemical Abstracts. If applicants want the abstracts from Chemical Abstracts to be made of record, the abstracts must be listed on form PTO-1449 as documents separate from the journal articles, and copies of the pages from Chemical Abstracts must be supplied.

The citation of an abstract of JP 9703090 has been deleted from  
15 the form PTO-1449 since no information is provided as to the source of the abstract and the date of publication of the abstract that will enable one to locate the abstract.

The Information Disclosure Statement (IDS) of 4/15/02 included copies of form PTO-892 from the parent application. Submitting a copy  
20 of form PTO-892 does not comply with MPEP 609 for listing documents by an IDS. If applicants want the documents made of record listed on the copies of PTO-892, an IDS complying with MPEP 609 and listing the documents on form PTO-1449 must be submitted.

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**Claim Rejections - 35 USC § 112**

The following is a quotation of the first paragraph of 35 U.S.C.

112:

5       The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10       Claim 75 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

15       The claim requires microorganisms. In such case, the microorganisms must have been known and readily available to the public before the present application was filed. If not known and readily available, for a complete disclosure, the microorganisms must be deposited in an acceptable depository and statements made assuring  
20       unrestricted availability to the public if a patent issues. See 37 C.F.R. 1.802 and MPEP 2402-1410.02.

      If the deposit is made under the terms of the Budapest Treaty, then an affidavit or declaration by applicants, or someone associated with the patent owner who is in position to make such assurances, or a  
25       statement by an attorney of record over his or her signature, stating that the deposit has been made under the terms of the Budapest Treaty and that all restrictions imposed by the depositor on the availability to the public of the deposited material will be irrevocably removed

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upon the granting of a patent, would satisfy the deposit requirements.  
See 37 CFR 1.808.

If a deposit has not been made under the terms of the Budapest Treaty, then an affidavit or declaration by Applicants or someone  
5 associated with the patent owner who is in a position to make such assurances, or a statement by an attorney of record over his or her signature, stating that the deposit has been made at an acceptable depository and that the following criteria have been met:

(a) during the pendency of this application, access to the  
10 deposit will be afforded to one determined by the Commissioner to be entitled thereto;

(b) all restrictions imposed by the depositor on the availability to the public of the deposited material will be irrevocably removed upon the granting of a patent;

15 (c) the deposit will be maintained for a term of least thirty(30) years and at least five(5) years after the most recent request for the furnishing of a sample of the deposited material;

(d) a viability statement is accordance with the provisions of 37 CFR 1.807; and

20 (e) the deposit will be replaced should it become necessary due to inviability, contamination or loss of capability to function in the manner described in the specification.

In addition the identifying information set forth in 37 CFR 1.809(d) should be added to the specification. See CFR 1.803 - 37 CFR  
25 1.809 for additional explanation of these requirements.

If the microorganisms required by the claim were known and readily available to the public prior to filing the present application, this should be established by evidence. Microorganisms that do not have an ATCC or NRRL number, do not appear to have been deposited in a Budapest treaty recognized depository, and it is uncertain how one would obtain these microorganisms since the specification fails to describe where the microorganisms can be obtained.

***Claim Rejections - 35 USC § 112***

10 The following is a quotation of the second paragraph of 35 U.S.C.

112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

15

Claims 52-79 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

20

In line 4 of claim 52, "from" should be "in" since the material is in the xylan-containing material and not from the material.

In line 6 of the claim, "and" should be replaced with a comma since "and" is recited before "hexosans".

25

In line 8 of the claim, the comma after "cellulose" should be changed to "and" for a proper Markush group.

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Bridging lines 14 and 15, "softwood as pine and spruce" is confusing as to what is required. This also applies to "grain as straw" in line 16.

5 In lines 18 and 20, "spent sulphite liquor" and "sulphite cooking liquor" do not appear to contain xylan since a xylan-containing material is not used to produce these liquors. This also applies to line 2 of claim 73.

In line 20, "liquids derived from any of the preceding" is uncertain as to liquids required.

10 In line 21, "extracted biomass" is confusing since extracting biomass has not been previously required.

In line 22, "mass" should be "biomass".

In line 23, it is uncertain as to material that is a "residue" since a previous step has not required that produces a residue.

15 In line 25 and where recited in any other lines, the meaning of "hydrolyzed hexoses" and "hydrolyzed pentoses" is confusing since these are monosaccharides and no step is required capable of hydrolyzing a monosaccharide. Requiring "hydrolyzed solids" is confusing since no solids capable of being hydrolyzed have been  
20 previously required.

In line 29, "separated biomass solution" is confusing since the biomass has been previously hydrolyzed and the biomass no longer exists.



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In line 35, it is uncertain as to material that is a "residue (residual) fraction" since nothing is previously required that can be the residue.

In line 41, "xylitol" is confusing since it is not seen how  
5 xylitol can result without hydrogenating or fermenting, which has not been previously required. Additionally, in this line "and" before "galactose" should be deleted for a proper Markush group.

In lines 48-50, it is uncertain as to the relationship of reducing pentoses and hexoses to fermenting previously required.

10 Bridging lines 1 and 2 of claim 55, "fermented liquid derived from said fermented solution" is confusing as to the difference in the liquid and solution.

In line 7 of claim 56, "that" should be "than".

In the last two lines of claim 57, reduction of the biomass and  
15 catalytic hydrogenation of the hydrolyzed biomass are not separating methods as required in line 2 of the claim.

In line 3 of claims 58 and 59, "e.g. NaOH" after "hydroxide addition" is confusing as to whether the addition is limited to NaOH.

In lines 3-5 of claim 61, it is uncertain as to steps that  
20 constitute "batch separation", "continuous simulated moving bed separation" and "sequential simulated moving bed separation".

Claim 69 is unclear as to which hydrolyzing in claim 52 is being further limited.

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In line 7 of claim 71, it is unclear how "catalytic hydrogenation" functions as a separating method required in line 2 of the claim.

Claim 72 is unclear how the hydrolyzed solution required differs from that already required in claim 52, and how "biomass hydrolysates" relates to the hydrolyzed solution in claim 52. Additionally, it is uncertain as to material that is a biomass within the scope of the claim.

Claim 73 is unclear how the material required can be a biomass hydrolyzate since it is unclear as to where a step of biomass hydrolyzing occurs in the processes required. In lines 6-9 of claim 73, it is uncertain as to processes that constitute "sa-prehydrolysis pulping", "solvent-based pulping", "phenol-based pulping", "formic acid based pulping" and "ethanol-based pulping". Additionally, it is not seen how "mother liquid from crystallization of xylose" and "diluted runoff of xylitol crystallation of sulphite spent pulping liquor based fraction" can contain biomass since xylose and xylitol are not biomass. It is noted that claim 73 does not have a period at the end.

In claim 75, it is unclear how the numbers and/or letters after the microorganism name, other than the ATCC and NRRL numbers, define and identify the microorganisms required.

In line 3 of claim 76, "or" should be "and".

#### **Conclusion**

The claims are free of the prior art.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to David M. Naff whose telephone number is 571-272-0920. The examiner can normally be reached on Monday-Friday 9:30-6:00.

5 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

10 Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see [http://pair-](http://pair-direct.uspto.gov)  
15 [direct.uspto.gov](http://pair-direct.uspto.gov). Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David M. Naff  
Primary Examiner  
Art Unit 1651

20 DMN  
1/15/05